

COMMONWEALTH OF KENTUCKY  
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE APPLICATION OF THE UNION COUNTY )	
WATER DISTRICT OF UNION COUNTY, )	
KENTUCKY, FOR A CERTIFICATE OF )	
PUBLIC CONVENIENCE AND NECESSITY; )	CASE NO. 9540
APPROVAL OF A PROPOSED PLAN OF )	
FINANCING AND PROPOSED WATER RATE )	
INCREASE )	

O R D E R

Union County Water District ("Union Water"), by application filed March 31, 1986, is seeking a certificate of public convenience and necessity for an \$859,134 waterworks improvements project, approval to refinance \$664,000 of existing debt, adjustments to its water service rates and approval of a \$1,519,000 plan of financing composed of \$19,000 from applicants for water service, \$1,460,000 Farmers Home Administration ("FmHA") funds (\$929,000 loan and \$531,000 grant), a \$40,000 grant from the Union County Fiscal Court and \$4,134 in materials to be supplied by Union Water.

The construction proposed by Union Water will improve water system operations, provide for a more adequate and reliable source throughout its distribution system and extend service to about 50 applicants located on rural roads in the northwest corner of Union County between the Ohio River Bridge to Shawneetown and the Union County communities of Spring Grove, Grove Center and Henshaw.

The construction plans and specifications prepared by Kennoy Engineers, Inc., Consulting Engineers of Lexington, Kentucky, ("Engineer") have been approved by the Division of Water of the Natural Resources and Environmental Protection Cabinet.

A hearing was held in the offices of the Public Service Commission in Frankfort, Kentucky, on October 15, 1986. No intervenors appeared at the hearing and no objections to the proposed construction were received. Subsequent to the hearing, the Commission was informed by a letter dated November 14, 1986, from Union Water that a further review of its billing analysis revealed a billing error to many of its largest customers. The combination of this error and the already present concerns about the accuracy of the data supporting the billing analysis caused the Commission to conduct a complete review of the billing analysis, which will be discussed in a later section of this Order. The result of this further review required Union Water to obtain a 30-day extension of its bids to December 13, 1986.

Union Water requested rates which would produce an annual increase of \$51,015. In this Order, the Commission has approved rates which will produce an annual increase of \$38,522.

#### SMALL DIAMETER WATER MAINS

The anticipated service life of distribution mains providing domestic service in rural areas is approximately 50 years. If adequately sized for cumulative increases in water service demands, the actual useful life of such mains may exceed the anticipated 50 years. Small diameter mains, however, seldom realize a 50-year useful life. As much as 50 to 90 percent of the

useful life of mains of 2-inch diameter or less may be lost (abandoned in place) because such pipe is too small to accommodate cumulative increases in demands for water.

Most of Union Water's current inventory of 57.5 miles of 2-inch distribution pipe represents an improper investment of its financial resources. Union Water should be advised that proposals for construction of additional 2-inch mains will not be approved by the Commission without substantial proof that such pipe represents a proper investment of financial resources through the provision of adequate water service over a substantial useful life.

Any length of small diameter distribution pipe constructed by Union Water should be in compliance with Subsection 11 (2)(a) of 807 KAR 5:066. The Commission admonishes Union Water for its failure to comply with Subsection 11 (2)(a) in its extensive construction of 2-inch pipe for distribution system purposes. The limited capacity of this pipe has been a detriment to the continuous provision of adequate and reliable service by Union Water.

#### DISCUSSION

Upon completion of the proposed project, Union Water will serve approximately 1,200 customers with only one full-time employee and a board of Commissioners; however, much of the accounting and maintenance functions are provided on a contract basis. Union Water's monthly bills are based on meter readings provided by its customers. The Commission commends Union Water for its effort to maintain the lowest cost possible for its customers, but as shown in this filing, major problems exist, which with more oversight may have been prevented. As presented

in the application, some \$30,000 in adjustments were made to the test period billing analysis without the maintenance of proper recordkeeping. Although many of these adjustments may have been justified due to faulty meter readings, much of the fault falls to Union Water which only seldom checks the customers' readings for accuracy. Also, many of these adjustments were made to reduce customers' bills when higher than normal readings occurred due to water loss on the customer's side of the meter, although such adjustments are not an obligation of the district. In addition, as discussed later, a billing error was discovered, resulting in a substantial underbilling to its large customers. These problems can only lead to the detriment of this system. The Commission highly suggests Union Water work closely with the Kentucky Rural Water Association, FmHA and this Commission to eliminate these problems. The Commission further recommends that a check and balance system be initiated to verify on a routine basis customer meter readings and computer programming be modified to identify unusually large bills for verification.

#### TEST PERIOD

Union Water proposed and the Commission has accepted the 12-month period ending December 31, 1985, as the test period in this matter.

#### REVENUES AND EXPENSES

Union Water reported net income of \$1,637 for the test period. Union Water proposed several pro forma adjustments to its test period operating revenues and expenses to more accurately reflect current operating conditions. The Commission finds these

adjustments reasonable and has accepted them for rate-making purposes with the following exceptions:

Water Sales

During the test period Union Water reported water sales of \$325,956. As a result of identifying the customers which were underbilled, the Commission has normalized the existing revenue by \$29,814. In addition the proposed new customers will produce revenues of \$7,422 for adjusted water sales of \$363,192.

Purchased Water Expense

Union Water reported purchased water expense in the amount of \$95,071 for the test period, to which it made a pro forma adjustment of \$1,402, for an adjusted water cost of \$96,473. The criterion for the adjustment was based on the water usage of the proposed new customers. On September 22, 1986, Union Water filed with the Commission a monthly summary for the test period of water purchases and sales which showed a reduction of purchased water expense reported in the 1985 Annual Report of \$5,608 due to an error in bookkeeping during 1985. An adjusted schedule entitled Water Produced, Purchased and Distributed was also filed which indicated water loss of 31 percent. However, as a result of the reexamination of the billing analysis, water sales on a normalized basis would have been 159,080,857 gallons, which results in an adjusted water loss of approximately 15.3 percent. The Commission has an established precedent for rate-making purposes of disallowing the cost associated with water loss in excess of 15 percent. Therefore, using the current rate charged by Union Water's supplier, the City of Morganfield, the Commission has determined that

the appropriate adjusted purchased water expense for rate-making purposes is \$90,380.<sup>1</sup>

On November 5, 1986, the Commission received several documents with reference to the hearing held on October 15, 1986, one of which indicated that the City of Morganfield intends to increase the cost of water to Union Water to approximately 82.2 cents per thousand gallons. The Commission is of the opinion that as soon as Union Water has negotiated a revised water contract with the City of Morganfield, it should forthwith file for an increase in water rates subject to the provisions of the Commission's Purchased Water Rate Adjustment Pursuant to KRS 278.012 and 278.015.

#### Inflation Adjustments

It is the practice of the Commission to allow only known and measurable increases to actual test period expenses which can be substantiated by appropriate documentation such as invoices and/or other related material which support the proposed adjustments. The notes to Union Water's comparative income statement indicate that the pro forma adjustment to the following accounts was calculated on the basis of an unsupported inflation adjustment.

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<sup>1</sup> Computation of Allowable Purchased Water Expense:

M-Gallons sold during the test period, including company use	161,066
M-Gallons to be sold to 50 new customers	2,388
Total M-Gallons	<u>163,454</u>
Factor	<u>+ .85</u>
Allowable M-Gallons	192,299
Cost per M-Gallons	<u>X \$.47</u>
Allowable purchased water expense	<u>\$90,380</u>

Union Water was cross-examined on this issue and given the opportunity to provide adequate documentation. On November 5, 1986, the Commission received adequate documentation from Union Water regarding its revised pro forma adjustment of \$1,984 to purchased power expense and \$2,959 to its property insurance. Based on the revised computations to Union Water the Commission has allowed an additional \$971 to purchased power expense and \$958 to property insurance over and above the amounts originally requested in its application on Exhibit O.

#### Transmission and Distribution Expense

Union Water proposed an adjustment to test year expenses related to transmission and distribution repair and maintenance expenses of \$13,063. Union Water contends that the repair and maintenance expense increased \$8,063 based on an average of the last two fiscal years 83-84, \$8,300 and 84-85, \$7,826, and the estimated cost of repairs to the proposed new water lines of \$5,000 for a total adjustment of \$13,063. No support was provided for the estimated \$5,000. Thus the Commission is of the opinion that this portion of the pro forma adjustment related to new water lines is speculative and has therefore reduced the pro forma adjustment by \$5,000.

#### Maintenance of Meters

During the test period, Union Water incurred maintenance expenses of \$21,821, or an increase of \$11,925 over the previous year related to the upgrading and repairing of the water meters within its system. In a response to this Commission's request for

information dated June 26, 1986, Union Water stated that the excess of \$11,925 was substantially for reworking its water meters. The Commission, in its efforts to establish just and fair water rates for the future, is of the opinion that the excess of \$11,925 should be amortized over a 3-year period. Therefore, maintenance of meters expense has been reduced by \$7,950.

#### Depreciation Expense

Union Water recorded depreciation expense in the amount of \$73,035 for the test period. The comparative income statement for the year ended December 31, 1985, filed with the application of Union Water and identified as Union Water Exhibit "0" showed two pro forma adjustments, the first being an adjustment of \$8,940 based on estimated depreciation expense on proposed construction cost of \$855,000, and the second adjustment of \$8,058 being Union Water's computation of disallowed depreciation expense, for an adjusted depreciation expense of \$73,917. On November 26, 1986, the Supreme Court of Kentucky rendered a decision in the cases of Public Service Commission of Kentucky v. Dewitt Water District, 86-SC-342-DG and East Clark Water District and Warren County Water District v. Public Service Commission and David L. Armstrong, Attorney General, Division of Consumer Protection Division, 86-SC-362-DG, finding that depreciation expense on contributed property should be recognized for rate-making purposes. Thus, the Commission finds that the appropriate adjusted test period



depreciation expense is \$100,071.<sup>2</sup>

Interest on Long-Term Debt

Union Water projected pro forma interest expense of \$69,675 based on an interest rate of 7 1/2 percent on the proposed bond issue of \$929,000. Item number 7 of the amended petition filed with the Commission on July 25, 1986, indicates an interest rate of 7 1/8 percent, which would reduce the interest expense requirement to \$66,191 or a difference of \$3,484. Therefore, the Commission has reduced interest on long-term debt by \$3,484.

Therefore, Union Water's adjusted operations at the end of the test period are as follows:

	<u>Union Water Adjusted</u>	<u>Commission Adjustments</u>	<u>Commission Adjusted</u>
Operating Revenues	\$ 346,545	\$ 29,814	\$ 376,359
Operating Expenses	<u>330,665</u>	<u>9,040</u>	<u>339,705</u>
Net Operating Income	\$ 15,880	\$ 20,774	\$ 36,654
Interest Income	6,500		6,500
Interest Expense	69,675	<3,484>	66,191
Amortization of Debt Discount & Expense	<u>1,447</u>		<u>1,447</u>
Net Income	<u>\$ &lt;48,742&gt;</u>	<u>\$ 24,258</u>	<u>\$ &lt;24,484&gt;</u>

REVENUE REQUIREMENTS

The Commission has used the debt service coverage method to determine appropriate revenue requirements for Union Water. Union

<sup>2</sup> Computation of depreciation expense:

Depreciation expense, per books, December 31, 1985	\$ 73,035
Add: Pro forma depreciation expense shown on Union Water's projected cost of \$859,134 at the rates shown in Exhibit O	<u>27,036</u>
Allowable depreciation expense	<u>\$100,071</u>

Water's annual debt service based on debt proposed in this proceeding is \$68,063.<sup>3</sup> Union Water's adjusted net operating income of \$36,654 plus interest income of \$6,500 provides a debt service coverage ("DSC") of .63X. The Commission is of the opinion that this coverage is unfair, unjust and unreasonable. To achieve a DSC of 1.2X, which the Commission is of the opinion is the fair, just and reasonable coverage necessary for Union Water to pay its operating expenses and to meet the requirements of its lenders, Union Water would require a net operating income of \$81,676. Accordingly, the Commission has determined that additional revenue of \$38,522 is necessary to provide the 1.2X DSC including interest income of \$6,500, which will ensure the financial stability of Union Water.

The increase in rates granted herein should produce gross annual revenues of \$421,381 for Union Water, including interest income. After deducting annual cash operating expenses of \$239,634<sup>4</sup> and the annual debt service requirement of \$68,063, Union Water will have some \$113,684 available to be set aside for replacement, renewals, extraordinary maintenance and future expansion. Of this amount, \$100,071 is derived from non-cash

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<sup>3</sup> Computation of average debt service:

Proposed debt - 5-year average of principal	\$ 2,000
5-year average of interest	66,063
Total debt service	<u>\$68,063</u>

<sup>4</sup> Adjusted operating expenses	\$339,705
Less: Depreciation Expense	<u>100,071</u>
Cash Operating Expenses	<u>\$239,634</u>

depreciation expenses. Union Water's bond authorizing resolution requires the creation of a depreciation fund which shall be used for the purpose of paying the cost of unusual or extraordinary maintenance, repairs, renewals or replacements not included in the annual budget of current expenses and the cost of constructing additions and improvements. Section 7(B) of the bond resolution requires a monthly deposit of at least \$735 into the depreciation fund; however greater amounts may be set aside upon approval by the Board of Commissioners. Both the Kentucky Supreme Court and the bond ordinance require that the allowance for depreciation expense be set aside. Based on the additional funds available this Commission recommends that Union Water consider setting aside an amount greater than the minimum requirement. Union Water is hereby advised that the Commission will monitor future Annual Reports and review future rate proceedings for the proper funding and utilization of additional revenues generated from the allowance of depreciation expense on contributed property.

#### RATE DESIGN

In its original petition, Union Water filed with the Commission Exhibit N containing a billing analysis that consisted of water usage and income data based on current and proposed rates for the existing system. Also included was water usage and income data for its proposed new customers.

On November 14, 1986, Union Water filed a letter with the Commission indicating that a billing error had been discovered on several large customers which had caused an understatement in the gallons of water used by those customers. According to the

letter, these customers have meters which are on a 100-gallon roll instead of a 10-gallon roll. However, for 36 months Union Water, by inadvertence, had dropped the fixed zero at the end of these customer's meter readings, resulting in the customers being billed for only one-tenth of their actual consumption each month. This error, along with errors in meter readings, has caused a large distortion in the amount of water sold.

Subsequently, on November 17, 1986, at the request of the Commission, Union water furnished a copy of its actual customer meter readings for the test year and from that information the Commission staff made a new billing analysis.

In its billing analysis the staff adjustments made were in accordance with Union Water's letter filed November 14, 1986. Specifically, a fixed zero was added to the usage amounts of the large users whose usage had been understated. The result of this adjustment is that usage amounts for these large users will approximate 100 percent of their actual usage instead of 10 percent for the test period 1985.

#### FINDINGS AND ORDERS

The Commission, having considered the application and evidence of record and being advised, is of the opinion and finds that:

1. Public convenience and necessity require that the construction proposed in the application and record be performed and that a certificate of public convenience and necessity be granted.
2. The proposed project includes the construction of about 17 miles (89,635 feet) of distribution system pipeline (1,280 feet

of 8-inch, 15 feet of 6-inch and 88,340 feet of 4-inch); 50 metered service connections; a new booster-pumping station at Grove Center and Kern Orchard; a 57,000-gallon storage tank on Bucktrack Road in the new service area; a 160,000-gallon storage tank at Sullivan in the southwest corner of the county; security fencing and access road for each new storage tank; repairing, painting and improving the existing 10,000-gallon tank at Moffit Lake; painting the existing 100,000-gallon tank at Dekoven; a pressure reducing station; and other miscellaneous construction and appurtenances.

3. The low bids totaled \$564,967 (\$356,998 for distribution system construction and \$207,969 for storage tanks, access roads and improvements to existing tanks). The funding required for this work will be approximately \$855,000, including engineering design fees, legal fees, resident inspection, interest during construction and a construction contingency. The available funding of \$855,000 should be adequate for completion of the work as bid including contingencies for construction.

4. Any deviations from the construction herein approved which could adversely affect service to any customer should be done only with the prior approval of this Commission.

5. Union Water should furnish duly verified documentation of the total costs of this construction including all capitalized costs (engineering, legal, administrative, etc.) within 60 days of the date that construction is substantially completed. Said costs should be classified into appropriate plant accounts in accordance

with the Uniform System of Accounts for Water Utilities prescribed by this Commission.

6. Union Water's contract with its Engineer should require full-time resident inspection under the general supervision of a professional engineer with a Kentucky registration in civil or mechanical engineering to insure that the construction work is done in accordance with the contract plans and specifications and in conformance with the best practices of the construction trades involved in the project.

7. Union Water should require the Engineer to furnish a copy of the "as-built" drawings and a signed statement that the construction has been satisfactorily completed in accordance with the contract plans and specifications within 60 days of the date of substantial completion of this construction.

8. A 5/8-inch x 3/4-inch meter should be the standard customer service meter for all new customers and should be installed at all points of service unless the customer provides sufficient justification for the installation of a larger meter.

9. The \$1,519,000 financing plan proposed by Union Water for its \$855,000 construction project and its \$664,000 for refinancing of existing debt is for lawful objects within its corporate purposes, is necessary and appropriate for and consistent with the proper performance of its services to the public and will not impair its ability to perform these services, is reasonably necessary and appropriate for such purposes and should, therefore, be approved.

10. The rates proposed by Union Water would produce revenues in excess of the revenues found reasonable herein and should be denied upon application of KRS 278.030.

11. The rates and charges in Appendix A are the fair, just and reasonable rates and charges to be charged by Union Water and should produce revenues from water sales of \$401,714 and gross revenues of \$421,381.

IT IS THEREFORE ORDERED that:

1. Union Water be and it hereby is granted a certificate of public convenience and necessity to proceed with the proposed construction as set forth in the plans and specifications of record herein.

2. Union Water's plan of financing consisting of applicant contributions in the amount of \$19,000, a \$40,000 grant from the Union County Fiscal Court, a loan from the FmHA in the amount of \$929,000 with an interest rate of 7 1/8 percent and a 40-year term, and a grant from the FmHA in the amount of \$531,000 be and it hereby is approved.

3. Union Water shall comply with all matters set out in Findings 4 through 8 as if the same were individually so ordered.

4. The rates and charges proposed by Union Water be and they hereby are denied.

5. The rates and charges in Appendix A be and they hereby are approved for service rendered by Union Water on and after the date of this Order.

6. If under new FmHA loan conditions Union Water is notified and granted an option to accept a lower interest rate on the

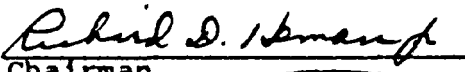
date of closing, then it shall file the following with the Commission within 30 days of the date of closing: (1) the FmHA notification of the lower interest rate and shall provide copies of all correspondence from and to FmHA concerning this notification; (2) a statement of the interest rate accepted from the FmHA; (3) amended pages to its bond resolution and an amended amortization schedule based on the different interest rate if a different rate is accepted; (4) full documentation of why the lower rate was not accepted showing an analysis of the higher costs associated with the loan over the loan's repayment period in the event the option to accept the lower rate is not taken by Union Water.

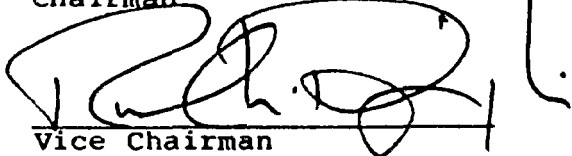
7. Within 30 days of the date of this Order, Union Water shall file with the Commission its revised tariff sheets setting out the rates for water service approved herein.

Nothing contained herein shall be deemed a warranty of the Commonwealth of Kentucky, or any agency thereof, of the financing authorized herein.

Done at Frankfort, Kentucky, this 15th day of December, 1986.

PUBLIC SERVICE COMMISSION

  
Chairman

  
Vice Chairman

ATTEST:

  
Commissioner

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Executive Director



## APPENDIX A

### APPENDIX TO AN ORDER OF THE KENTUCKY PUBLIC SERVICE COMMISSION IN CASE NO. 9540 DATED 12/15/86

The following rates and charges are prescribed for the customers receiving water service from Union County Water District. All other rates and charges not specifically mentioned herein shall remain the same as those in effect under authority of this Commission prior to the effective date of this Order.

#### Monthly Rates Per Meter Size

##### 5/8" Meter

First	2,000 gallons	\$6.60 Minimum Bill
Next	3,000 gallons	3.30 per 1,000 gallons
Next	5,000 gallons	3.00 per 1,000 gallons
Next	15,000 gallons	2.75 per 1,000 gallons
Next	25,000 gallons	2.45 per 1,000 gallons
Next	50,000 gallons	2.10 per 1,000 gallons
Next	100,000 gallons	1.85 per 1,000 gallons
Next	100,000 gallons	1.55 per 1,000 gallons
Over	300,000 gallons	1.20 per 1,000 gallons

##### 3/4" Meter

First	5,000 gallons	\$16.50 Minimum Bill
Next	5,000 gallons	3.00 per 1,000 gallons
Next	15,000 gallons	2.75 per 1,000 gallons
Next	25,000 gallons	2.45 per 1,000 gallons
Next	50,000 gallons	2.10 per 1,000 gallons
Next	100,000 gallons	1.85 per 1,000 gallons
Next	100,000 gallons	1.55 per 1,000 gallons
Over	300,000 gallons	1.20 per 1,000 gallons

##### 1" Meter

First	10,000 gallons	\$31.50 Minimum Bill
Next	15,000 gallons	2.75 per 1,000 gallons
Next	25,000 gallons	2.45 per 1,000 gallons
Next	50,000 gallons	2.10 per 1,000 gallons
Next	100,000 gallons	1.85 per 1,000 gallons
Next	100,000 gallons	1.55 per 1,000 gallons
Over	300,000 gallons	1.20 per 1,000 gallons

1 1/2" Meter

First 25,000 gallons  
Next 25,000 gallons  
Next 50,000 gallons  
Next 100,000 gallons  
Next 100,000 gallons  
Over 300,000 gallons

\$72.75 Minimum Bill  
2.45 per 1,000 gallons  
2.10 per 1,000 gallons  
1.85 per 1,000 gallons  
1.55 per 1,000 gallons  
1.20 per 1,000 gallons

2" Meter

First 50,000 gallons  
Next 50,000 gallons  
Next 100,000 gallons  
Next 100,000 gallons  
Over 300,000 gallons

\$134.00 Minimum Bill  
2.10 per 1,000 gallons  
1.85 per 1,000 gallons  
1.55 per 1,000 gallons  
1.20 per 1,000 gallons

2 1/2" Meter

First 75,000 gallons  
Next 25,000 gallons  
Next 100,000 gallons  
Next 100,000 gallons  
Over 300,000 gallons

\$186.50 Minimum Bill  
2.10 per 1,000 gallons  
1.85 per 1,000 gallons  
1.55 per 1,000 gallons  
1.20 per 1,000 gallons

3" Meter

First 100,000 gallons  
Next 100,000 gallons  
Next 100,000 gallons  
Over 300,000 gallons

\$239.00 Minimum Bill  
1.85 per 1,000 gallons  
1.55 per 1,000 gallons  
1.20 per 1,000 gallons

4" Meter

First 200,000 gallons  
Next 100,000 gallons  
Over 300,000 gallons

\$424.00 Minimum Bill  
1.55 per 1,000 gallons  
1.20 per 1,000 gallons